4. ACCIDENT AND EXPOSURE PREVENTION

This HASP is to be used in conjunction with PRD-25 and OCVZ Project work authorization and control documents such as STD-101 work orders; JSAs; MCP-3562, "Hazard Identification, Analysis, and Control of Operational Activities"; and technical procedures. Where appropriate, MCP-3562 and GDE-62 12, "Hazard Mitigation Guide for Integrated Work Control Process," mitigation guidance will be incorporated into applicable work controls, JSAs, and RWPs.

4.1 Voluntary Protection Program and Integrated Safety Management System

The OCVZ Project will incorporate Voluntary Protection Program (VPP) and ISMS criteria, principles, and concepts to identify and mitigate hazards, thereby preventing accidents. All management and workers are responsible for implementing safety policies and programs and for maintaining a safe and healthful work environment. Project operations personnel will take a proactive role in preventing accidents, ensuring safe working conditions for themselves and fellow personnel, and complying with all work-control documents, procedures, and permits. Safety of project personnel is the most important value and protection of the public and the environment are the highest priorities in the successful operation of the OCVZ Project. A strong safety culture must be integrated into all aspects of OCVZ Project operations, the management philosophy, processes, plans, and day-to-day OCVZ Project operations, maintenance, and construction activities.

The **ISMS** is focused on the **system** side of conducting operations and **VPP** concentrates on the **people** aspect of conducting work. Both programs define work scope, identify and analyze hazards, and mitigate the hazards. The INEEL and its subcontractors participate in VPP and ISMS. This HASP includes all elements of both systems. The five key elements of VPP and ISMS and their corresponding HASP sections are as shown in Table 4-1.

4.2 General Safe-Work Practices

The following general safe-work practices are mandatory for all OCVZ Project operations personnel to hrther reduce the likelihood of accidents, injuries, and exposures. In addition, all visitors permitted to enter OCVZ Project work areas must follow these requirements. Failure to follow these practices may result in permanent removal of personnel from the OCVZ Project work area.

Table 4-1. Five key elements of the Voluntary Protection Program and Integrated Safety Management System and corresponding sections of the Organic Contamination in the Vadose Zone Project health and safety plan.

Voluntary Protection Program	Integrated Safety Management System	Project Operations Health and Safety Plan Section
Work site analysis	Define work scope Analyze hazards	Section 1 Sections 2, 3, 5 and **8**
Hazard prevention and control	Develop and implement controls	Sections 2, 3, 4, 5, 7, 10 and 11
Safety and health training	Perform within work controls	Section 6
Employee involvement		Sections 2, 3 and 4
Management leadership	Provide feedback and improvement	Sections 6 and 9

OCVZ Project and other disciplinary actions. The VVET technician, in conjunction with assigned health and safety and RadCon personnel, will be responsible for ensuring the following safe-work practices are adhered to at the OCVZ Project site:

- Limiting access to OCVZ Project operations areas to authorized personnel only, in accordance with PRD-1007, "Work Coordination and Hazards Control."

- Ensuring personnel must be aware of and comply with all safety signs, tags, barriers, and color codes as identified in PRD-5117, "Accident Prevention Signs, Tags, Barriers, and Color Codes."

- Ensuring personnel are familiar with the physical characteristics of the VVET units and operational requirements, including, but not limited to, the following:

  - Layout of the units, controls, and egress routes

  - Project waste types that may be encountered

  - Facility and RWMC warning devices and alarms

  - Communications between OCVZ Project personnel and RWMC shift supervisors

  - Major SDA roads and means of access to and from the VVET units

  - Location of facility emergency response equipment and first-aid supplies.

  - Ensuring personnel are alert for dangerous situations (e.g., facility alarms, spills, accidents, and injuries) and reporting dangerous situations and near misses to the shift supervisor. The shift supervisor will make required notification in accordance with Section 10.

  - Providing adequate information to the oncoming shift personnel, including equipment and system status and inspection logs, and communicating all nonoperational systems, monitors, and safety components and ensuring they are tagged to indicate appropriate status (e.g., out of service or do not use).

- Planning and reviewing all tasks before initiating the activity. Verifying all work control documents (e.g., the RWP, JSA, TPR, or work order) are current and correct for the activity. Ensuring the required prejob briefing is conducted for all activities in accordance with MCP-3003, "Performing Prejob Briefings and Post-Job Reviews."

- Conducting all OCVZ Project activities in accordance with the applicable TPR or work order. Conducting all operational activities as stated in the applicable work control document including hold points and requirements. Following TPRs in a step-by-step sequence.

Note: It is the responsibility of all project personnel to identify, understand, and follow the appropriate work controls for their activities. If the TPR or work order cannot be performed as written then STOP the activities until the work control document can be changed.

- Ensuring all project personnel understand their authority to initiate STOP WORK actions in accordance with MCP-553, "Stop Work Authority."

- Ensuring personnel are familiar with VVET unit tools and equipment, which they are responsible to operate, including operating limitations, maintenance, inspection, and manufacturer's operating instructions requirements. Ensuring tools and equipment are used only for their intended use.

- Understanding the PPE requirements for all tasks as stated on the applicable JSA or work order. This includes proper use and limitation of all PPE. If questions arise about PPE, personnel will contact the assigned IH, SP, or RCT as applicable.

- Ensuring that personnel wear all required dosimetry in the SDA, including any supplemental dosimetry (e.g., electronic dosimeters and albedo dosimeters). Responding to all radiological alarms including, but not limited to, instrument and personal contamination monitor (PCM) alarms.

- Ensuring that project personnel do not eat, drink, chew gum or tobacco, smoke, apply cosmetics or sunscreen, or perform any other practice that increases the probability of hand-to-mouth transfer and ingestion of materials in the SDA. An exception may be granted by RadCon management and IH to allow for drinking water during summer months. Ensuring that if this exception is granted, personal contamination surveys will be conducted before drinking water in the SDA.

- Practicing good housekeeping at all times. Turning in or placing tools in the designated storage location after use and putting waste materials in appropriate waste containers or receptacles. If question arises as to where to dispose of a waste article, personnel should ask the supervisor or the shift supervisor.

- Identifying additional health, safety, and radiological requirements in project operations technical procedures and work packages.

4.3 Subcontractor Responsibilities

Subcontractors used to support OCVZ Project activities are responsible for meeting all applicable INEEL MCP, PRD, VPP, and ISMS flow-down requirements such as those listed on the completed INEEL Form 540.10, "Checklist for Subcontractor Requirements for On-Site Nonconstruction Work"; *Subcontractor Requirements Manual* (TOC-59); and contract general and special conditions. Additionally, subcontractors are expected to take a proactive role in hazard identification and mitigation while conducting operational support tasks. Subcontractors will report unmitigated hazards to the VVET

technician after taking protective actions (within the documented work controls) and emergency protective actions (e.g., evacuate from the area and warn others).

4.4 Radiological and Chemical Exposure Prevention

Chemical, radiological, and physical hazards will be mitigated through the use of engineering controls, work procedures and hold points, area and personnel monitoring, and PPE where possible or to minimize them where engineering controls are not feasible. All OCVZ Project operations personnel are responsible for understanding the hazard identification and mitigation measures necessary to prevent or reduce exposures. Radiological hazards, monitoring, and ALARA principles were discussed in Section 2 and 3. Implementing ALARA principles will be the primary radiological prevention method. This section describes chemical exposure prevention strategies for use where engineering controls are not feasible and for implementation as good work practices.

4.4.1 Chemical and Physical Hazard Exposure Avoidance

Note: Identification and control of exposures to carcinogens will be conducted in accordance with MCP-2703, "Carcinogens."

The primary potential for exposure to nonradiological contaminants is the same as the radiological sources (i.e., SDA waste [see Table 1]). Additionally, chemicals (e.g., fuels, lubricants, and cleaners) will be used in support of OCVZ Project activities. Operations personnel will be required to have material safety data sheets (MSDSs) for all chemicals used in accordance with MCP-2715, "Hazard Communication." All chemicals entering RWMC must be entered into and tracked using the INEEL Chemical Management System (INEEL 2003a: http://mrhyde.inel.gov/). The INEEL Chemical Management System is used for maintaining and tracking the inventory of chemical containers.

4.5 Buddy System

The two-person or buddy system will be used during some OCVZ Project operations. The buddy system is required during operational activities requiring the use of protective clothing where heat stress and other hazards may impede a person's ability to self-rescue, or when subsidence rules are in effect within the SDA. The buddy system requires each employee to assess and monitor their buddy's mental and physical well-being during the course of the operation. A buddy must be able to perform the following activities:

- Provide assistance if required
- Verify the integrity of PPE
- Observe his or her buddy for signs and symptoms of heat stress, cold stress, or contaminant exposure
- Notify other personnel in the area if emergency assistance is needed.

The need to use the buddy system during OCVZ Project operations will be determined by the VVET technician in conjunction with the shift supervisor and IH personnel.

5. PERSONAL PROTECTIVE EQUIPMENT

Designed engineering safety systems and components of VVET units serve as the primary hazard controls during normal VVET operations to confine chemical waste hazards. Other chemical and physical hazards that will be encountered in conjunction with OCVZ Project activities are presented in Section 2. Where hazards cannot be eliminated through engineering or administrative controls, PPE will be used to protect personnel.

Project personnel and visitors who enter the OCVZ Project areas must be protected against potential safety, health, and radiological hazards. Processes from PRD-25 and STD-101 are used to evaluate all project activities and define the appropriate PPE for all operational activities and areas in accordance with 29 CFR 1910 Subpart I hazard-assessment requirements. This section provides guidance for the selection and use of PPE to be worn for OCVZ Project activities and contingencies for upgrading or downgrading PPE. The actual PPE requirement for specific OCVZ Project operational, maintenance, and sampling tasks will be specified in applicable JSAs, technical procedures, work packages, SWP, or RWP.

5.1 Personal Protective Equipment Selection and Use

The purpose of PPE is to shield or isolate personnel from radiological, nonradiological, physical, and biological hazards that cannot be eliminated through engineering or other controls. It is important to realize that no single PPE ensemble can protect against all hazards under all conditions, and that proper work practices and adequate training will serve to augment PPE to provide the greatest level of protection to workers. A minimum of Level D PPE will be worn when conducting OCVZ tasks in the SDA.

The PPE will be selected, issued, used, and maintained in accordance with PRD-5121. Selection of the proper PPE to protect facility personnel is based on the following:

- Specific conditions and nature of the tasks (e.g., sampling, construction, and maintenance)
- Potential contaminant routes of entry
- Physical form and chemical characteristics of the chemicals or waste contaminants
- Acute and chronic effects from exposure to the chemicals or waste contaminants
- Local and systemic toxicity of the chemicals or waste contaminants
- Potential exposure levels (surface and airborne)
- Hazard analysis (Section 2) evaluation of this HASP

Radiological contamination anti-contamination (Anti-C) clothing requirements will be developed in accordance with MCP-432 and listed on the RWP.

The PPE is generally divided into two broad categories: (1) respiratory protective equipment and (2) personal protective clothing. Table 5-1 lists the minimum required, task-based respiratory protection and protective clothing for OCVZ tasks. Listed PPE levels may be augmented by JSA, TPR, work order, or RWP-specific requirements. Project operations will be evaluated to determine the most appropriate PPE levels and any modifications required. Potential exposures and hazards associated with OCVZ

Project activities will be monitored (as discussed in Section *3)* during the course of the project to evaluate changing conditions and to determine PPE-level adequacy and the need for modifications.

Table 5-1. Project-based personal protective equipment requirements and modifications.

Project Activity	Personal Protective Equipment Level	Primary or Upgrade Contingency	Modifications and Comments
• VVET unit operation • Sampling and Analysis • VVET unit maintenance, construction, and upgrades • Housekeeping	**Level D**	**Primary for all OCVZ activities**	Level D PPE including: • Hard hat (if required by industrial safety engineer in JSA, TPR, work order, or postings), • Safety glasses with side shields, • Safety toe boots for OCVZ workers, or substantial above the ankle footwear for visitors and construction personnel, • Hand protection for material handling, hoisting, rigging, and maintenance will be defined in the JSA, TPR, work order, or RWP.
	Modified Level D	Upgrade contingency	Upgrading to modified Level D (anti-C protective clothing or Tyvek coveralls, or equivalent) may be required if contamination (radiological or nonradiological) is detected above the action limit, or if other physical hazards are encountered, requiring an upgrade in protective equipment.
	Level C	Upgrade contingency	If airborne contaminants increase to concentrations above established action limits, Level C (as defined in Table *3-3)* will be worn until the airborne hazard is controlled below the action limit.

JSA = job safety analysis
OCVZ = organic contamination in the vadose zone
PPE = personal protective equipment
SWP = safe work permit
VVET = vapor vacuum extraction with treatment

5.2 Respiratory Protection

Although respiratory protection is not anticipated during OCVZ Project activities, this section is provided as a contingency. The primary objective will be to prevent or significantly reduce levels of atmospheric contamination (i.e., air contaminated with harmful dusts, fumes, mists, gases, smokes, vapors, or airborne radioactivity) to prevent inhalation of potential toxic substances. This will be accomplished as far as feasible through implementation of existing project engineering controls, isolation, and barriers. When effective engineering controls are not feasible, appropriate respirators will be selected and used. Assigned protection factors for respiratory devices are listed in MCP-2726, "Respiratory Protection."

All personnel required to wear respirators shall complete training and be fit-tested before being assigned a respirator. Requirements for respirator use, emergency use, storage, cleaning, and maintenance, as stated in MCP-2726, shall be followed.

5.3 Personal Protective Clothing Upgrading and Downgrading

The assigned OCVZ Project HSO in conjunction with the RWMC Shift Supervisor, IH, safety professional, and RadCon personnel will be responsible for determining when to upgrade or downgrade PPE requirements. Upgrading or downgrading of PPE is based on changing conditions (e.g., equipment, VVET status, and location of tasks) and is a normal occurrence. If changing conditions are encountered, work control documents (e.g., work order, RWP, TPR, or JSA) may need to be updated to reflect these changes or be augmented by an SWP. Additional reasons for upgrading or downgrading are listed in the following subsections.

5.3.1 Criteria for Upgrading Personal Protective Equipment

The level of PPE required will be upgraded for the following reasons and work will halt until PPE upgrading is complete:

- Identification of new, unstable, or unpredictable hazards or exposures
- Occurrence of temporary loss or failure of any engineering controls
- Presence of contaminants that present difficulty in monitoring or detecting
- Presence of known or suspected skin absorption hazards
- Newly identified source or potential increasing concentration of respiratory hazard(s) anticipated
- Operational activity change that may result in an increased contact with contaminants or triggering any of the criteria listed above.

5.3.2 Downgrading Criteria

The level of PPE will be downgraded under the following conditions:

- Elimination of hazard or completion of activity or task(s) requiring specific PPE
- Implementation of new engineering or administrative controls that eliminate or significantly mitigate hazard
- Sampling information or monitoring data that show contaminant levels to be stable and lower than initial or estimated levels
- Elimination of potential skin-absorption or contact hazards.

5.4 Inspection of Personal Protective Equipment

All PPE ensemble components must be inspected before use and when used in accordance with PRD-5121. Once PPE is donned, self-inspection will serve as the principal form of inspection. If PPE should become damaged or degradation or permeation is suspected, then the individual wearing the PPE will inform others of the problem and proceed directly to the work area exit point. Following required surveys (as required), PPE will be doffed and replaced. In addition, all PPE that becomes grossly contaminated or presents a potential source for the spread of such contamination will be required to be decontaminated or replaced.

6. ORGANIC CONTAMINATION IN THE VADOSE ZONE PROJECT PERSONNEL TRAINING

Training of OCVZ Project personnel is a key element of the hazard identification and mitigation process. All assigned project personnel will be trained in requirements contained in this HASP and other related safety and health documents such as JSAs. Personnel will receive training, as specified in the applicable section of the HAZWOPER standard (29 CFR 1910.120), RWMC, DOE, federal, state, and INEEL companywide manuals as applicable. The purpose of this section is to provide only the 29 CFR 1910.120 HAZWOPER training requirements based on the minimum access requirements for personnel entering OCVZ-controlled areas within the SDA. This HASP is not intended to be inclusive of all required facility-specific, specialized training, conduct of operations, and other qualification training as defined in individual training plans (ITPs). As such, the training requirements listed in Table 6-1 represent the minimum requirement to access the OCVZ Project areas to conduct operational, construction, and maintenance activities.

6.1 Training Roles and Responsibilities

The Training Directorate oversees and coordinates training analysis, design, development, implementation, and evaluation in close association with responsible management. The Training Directorate also ensures that employees who require qualification or certification meet the minimum qualification requirements and receive appropriate training. Other activities include tracking and maintaining training records. All OCVZ Project training will be developed, conducted, and maintained in accordance with *Manual 12—Training and Qualijcation*.

6.1.1 Required Training for the Radioactive Waste Management Complex

The Balance of INEEL Cleanup Operations director controls all OCVZ Project operational activities, including training. The operations director is responsible for all aspects of safe operation. It is the responsibility of the Balance of INEEL Cleanup Operations director to ensure maintenance craft personnel i.e., electricians, pipe fitters, and instrument technicians) supporting OCVZ activities are trained and qualified in accordance with *Manual 12—Training and Qualification.*

6.1.2 Training Requirement for the Organic Contamination in the Vadose Zone Project

The OCVZ Project manager is responsible for ensuring all assigned OCVZ Project personnel conducting operational tasks are trained in accordance with this HASP and project position ITPs. The VVET technician is responsible for ensuring all construction support personnel supporting VVET unit upgrade, maintenance, and construction tasks meet the minimum training requirements listed in Table 6-1.

6.2 Personnel Selection

Personnel selection for the OCVZ Project complies with company staffing procedures. Employee position descriptions are used for personnel selection. These position descriptions identify entry-level requirements for all INEEL personnel.

Table 6-1. Minimum required training for access to Organic Contamination in the Vadose Zone Project areas.

Personnel and Operational Areas to be Accessed (unless specific positions are listed, minimum access requirements apply to all other operations personnel and visitors)	Assigned OCVZ VVET Technicians, Engineers, Samplers, and Assigned Environment, Safety, and Health and Radiological Control Personnel	Project Support Craft, Construction, and Vendor Personnel Accessing OCVZ Operational or Controlled Work Areas to Perform Work Activities	Visitors and Vendors Not Entering OCVZ Controlled Work Areas or Entering During Inactive Periods Where no Significant Safety or Health Hazard Exists
Required Training			
40-hour HAZWOPER[a]	Yes	b	
24-hour HAZWOPER[a]		Yes	b
HAZWOPER supervisor	VVET technicians		
OCVZ HASP training[c]	Yes	Yes	
OCVZ-site orientation briefing[d]			Yes
RW I or II[e]	RW II	Escort or RW I	Escort or RW I
Medic first aid/CPR (or equivalent)	Yes		
Respiratory protection			
RWMC access[g]	Yes	Yes or escort[h]	Escort

NOTE: *Shaded fields indicate specific training is not required or applicable.*

a. Includes 8-hour HAZWOPER refresher training as required, and supervised field experience as follows (29 CFR 1910.120[e]): 40-hour HAZWOPER = 24-hour supervised field experience and 24-hour HAZWOPER = 8-hour supervised field experience.
b. 40-hour HAZWOPER training requirement Will be determined by the assigned IH and safety professional based on the nature of the operational tasks and potential for exposure to contaminants or significant safety hazards. 24-hour HAZWOPER training at a minimum.
c. Includes project-specific hazards communications (29 CFR 1910.1200), site-access and security, decontamination and emergency response actions, as required by 29 CFR 1910.120(e), "Training."
d. Orientation includes briefing on site hazards, designated work areas, emergency response actions, and PPE requirements. Personnel receiving only a project-site orientation briefing are limited to the areas outside controlled and designated work areas and must be escorted by a HAZWOPER supervisor trained person (such as a VVET Technician) or designee who has completed HASP training.
e. Training requirements and allowances for escort into radiologically controlled areas are provided in PRD-183.
E Respiratory protection training is only required for personnel using respiratory protection as defined by the IH or RCT.
g. RWMC facility, operations, and qualification training (such as RWMC access training, Conduct of Operations) that area are not HAZWOPER requirements are not listed. These additional training requirements are administered and controlled by the RWMC NFM, operations director, and associated training doctorate and are beyond the scope of this HASP.
h. Allowance for escort will be limited to vendor personnel providing short duration support to construction, maintenance, or operations.

CFR = *Code of Federal Regulations*
CPR = cardiopulmonary resuscitation
HASP = health and safety plan
HAZWOPER = Hazardous Waste Operations and Emergency Response
HASP = health and safety plan
IH = industrial hygienist
NFM = nuclear facility manager
OCVZ = organic contamination in the vadose zone
OU = operable unit
PPE = personal protective equipment
PRD = program requirements document
RadCon = Radiological Control
RW = radiological worker
RWMC = Radioactive Waste Management Complex
VVET = vapor vacuum extraction with treatment

6.3 Qualification and Certification Processes

Qualification requires demonstration and documentation of experience, physical attributes, training, knowledge, and skills necessary to perform a specific job function. Supervisors are qualified by meeting entry-level requirements associated with the supervisory position and by completing applicable facility-specific training. This ensures that supervisors possess the required knowledge and skills (when combined with previous education, experience, and training) to perform responsibilities specific to their position. Positions that require qualification for the OCVZ Project include VVET technicians and RCTs.

Personnel requiring OCVZ Project operation- or position-specific qualifications or certifications will complete the necessary training before beginning their project activities. As appropriate, a qualified instructor or subject matter expert will conduct the training and document it in accordance with companywide procedures, or formal on-the-job training will be conducted in accordance with MCP-61, "Conduct and Evaluation of on-the-Job Training."

Certification is the formal endorsement by facility management of an individual who has completed the qualification(s) and other requirements (e.g., a physical examination, written examination, operational evaluation, and oral examination) related to a specific position. The VVET technician is an example of a position that requires certification for the OCVZ Project.

6.4 Training Records

Training records for assigned OCVZ Project personnel will be kept in accordance with MCP-85, "Training Records Administration," by the RWMC training organization. Documentation of a qualification or certification is placed in an employee's training file and maintained by the RWMC training organization. Employee experience and employment history records are maintained by the Human Resources organization in individual personnel files.

6.5 Organic Contamination in the Vadose Zone Project Hazardous Waste Operations and Emergency Response Training

Table 6-1 represents the minimum HAZWOPER and radiological training requirements for entry into CERCLA OCVZ Project operations, construction, and maintenance areas. As stated earlier, this Table 10-2 is not intended to be a complete list of training and qualification requirements for all personnel that enter OCVZ Project areas, but rather lists the minimum HAZWOPER access requirements for entry into these areas. A higher level of HAZWOPER and radiological training may be required based on the nature of maintenance and construction tasks and the hazards present.

Changes to the CERCLA HAZWOPER requirements in Table 6-1, may be made based on changing field conditions, addition or elimination of hazards, implementation of engineering controls, or revisions in regulatory requirements. All changes to Table 6-1 requirements will be approved by the OCVZ Project manager with concurrence from the VVET technicians, RadCon, and safety and health professionals.

Changes to RWMC facility-specific training requirements are the responsibility of the NFM in conjunction with the operations director and the RWMC training directorate in accordance with *Manual 12—Training and Qualification* and RWMC supplemental MCP. Individual training plans for assigned OCVZ Project personnel reflect the required training for individual employees and specify required qualification and certification requirements. Individual training plans are revised at least annually or as needed.

As part of OCVZ Project training, personnel will receive HASP training. After completing HASP training, trained personnel will sign Form 361.25, "Group Read and Sign Training Form," or an equivalent form, or by receiving credit for reading through INEEL Electronic Document Management System (INEEL 2003b), indicating that they have received this training, understand the project tasks, associated hazards and mitigations, and agree to follow all HASP and other applicable work control and safety requirements. Form 361.25 (or equivalent training forms) are available on the INEEL intranet under "Forms."

A trained HAZWOPER 8-hour supervisor will monitor the performance of each newly 24- or 40-hour trained worker to meet the 1 or 3 days of supervised field experience, respectively, in accordance with 29 CFR 1920.120(e), "Training." Following the supervised field experience period, the supervisor will complete Form 361.47, "HAZWOPER Supervised Field Experience Verification," or equivalent, to document the supervised field experience.

Note 1: Supervised field experience is only required if personnel have not previously completed this training at another 29 CFR 1910.120(e)-covered CERCLA site, or they are upgrading from 24- to 40-hour HAZWOPER training. A copy of the completed Form 361.47 (or equivalent documentation for personnel who have already completed this requirement at another CERCLA site) will be submitted to the RWMC training for entry into the Training Records and Information Network.

Note 2: All RWMC and other support personnel (e.g., crafts and RCTs) who have been trained under 29 CFR 1910.120(p), "Certain Operations Conducted Under the Resource Conservation and Recovery Act of 1976 (RCRA)," will require the appropriate supervised field experience (8 or 24 hour) to be documented (as defined in Note 1) by a trained HAZWOPER-trained supervisor in accordance with 29 CFR 1920.120(e), "Training."

6.6 Prejob and Postjob Briefings and Safety Meetings

All OCVZ Project activities performed in accordance with companywide requirement documents will require a prejob briefing conducted by a supervisor. During this briefing, tasks associated with OCVZ Project activities will be outlined, hazards identified, hazard controls and mitigation reviewed, PPE requirements discussed, waste minimization opportunities communicated, and employees' questions answered. Following the completion of operational activities, a postjob briefing will be conducted with particular emphasis of capturing lessons learned and process improvement for future operations.

Other safety meetings on various subjects will be conducted periodically for project personnel to reinforce specific safety topics. A VVET technician or assigned safety and health operations personnel or worker may conduct safety meeting. Attendance at the safety meetings will be documented on an applicable form and submitted to training personnel for entry into Training Records and Information Network.

7. SITE CONTROL AND SECURITY

The OCVZ Project VVET unit operational areas are fenced and controlled to prevent unauthorized entry into operations areas. Entry into and exit out of other project areas will be controlled through the appropriate use of barriers, signs, and other measures in accordance with PRD-5117, "Accident Prevention Signs, Tags, Barriers, and Color Codes." Radiological controlled areas will be established by RadCon personnel, in accordance with the MCP-187, "Posting Radiological Control Areas."

7.1 Designated Work Areas

The existing configuration of the VVET units and nature of the monitoring tasks to be completed fall under operations requirements and formal HAZWOPER-defined work zones (e.g., exclusion, contamination reduction, and support zones) will not be established. For W E T unit tasks, the designated work area will consist of all areas within the existing unit perimeter fence and inside the unit weather enclosure. Short duration OCVZ field monitoring or sampling tasks in the SDA (e.g., surface vapor port sampling) will establish a designated work area using stanchions, or the equivalent, to mark off the area. No radiological control areas (other than the established SDA general radiological buffer area designation) are anticipated to be required.

Additional work or construction areas will be established to control access and minimize personnel in the overhead hazard area during VVET unit construction and maintenance activities that require hoisting and rigging equipment. This area will be large enough to encompass the swing radius of cranes and working areas of other heavy equipment used at the task sites.

Note: Visitors will not be allowed into the VVET unit designated work area during certain tasks (e.g., lockout/tagout [LO/TO] and hoisting and rigging) to minimize safety or health hazards, and as an ALARA consideration. Visitor authorization for access into the controlled or designated work area will be made by the VVET technician in consultation with the assigned HSO, safety professional, and IH (these personnel will be consulted if the VVET unit is posted as a radiolonically controlled area).

Personnel not directly involved with OCVZ Project activities shall be excluded from entering the VVET unit areas. Visitors (e.g., inspectors) may be authorized to enter the established OCVZ Project activity area provided they are conducting official business and have met the minimum project training requirements for the area to be accessed (as listed on Table 6-1) as posted, and based on the nature of the tasks being conducted. Personnel not assigned or supporting the OCVZ Project will require the VVET technician or other HAZWOPER-supervisor-trained designee as an escort.

Figure 1-2 illustrates the general configuration of the SDA. Individual VVET units located within the SDA are illustrated in Figure 1-6.

Figure 7-1 illustrates an example of how designated work areas for monitoring locations in the SDA could be delineated. An example of a construction area around a VVET unit is depicted in Figure 7-2. Figures 7-1 and 7-2 serve as examples for the general configuration of the designated work areas and are not intended to provide the exact layout, size, or position of the equipment. Changing field conditions may warrant reconfiguring the layout, size, and orientation of designated work areas (or construction areas). Such changes will be implemented in accordance with the decision of the HSO in conjunction with the IH, RCT, and VVET technician, based on site conditions, work requirements, and radiological evaluations. The work areas may be upgraded to include support zone, contamination reduction zone, and exclusion zone based on changing field conditions as determined appropriate by the HSO with concurrence of the IH and safety engineer.

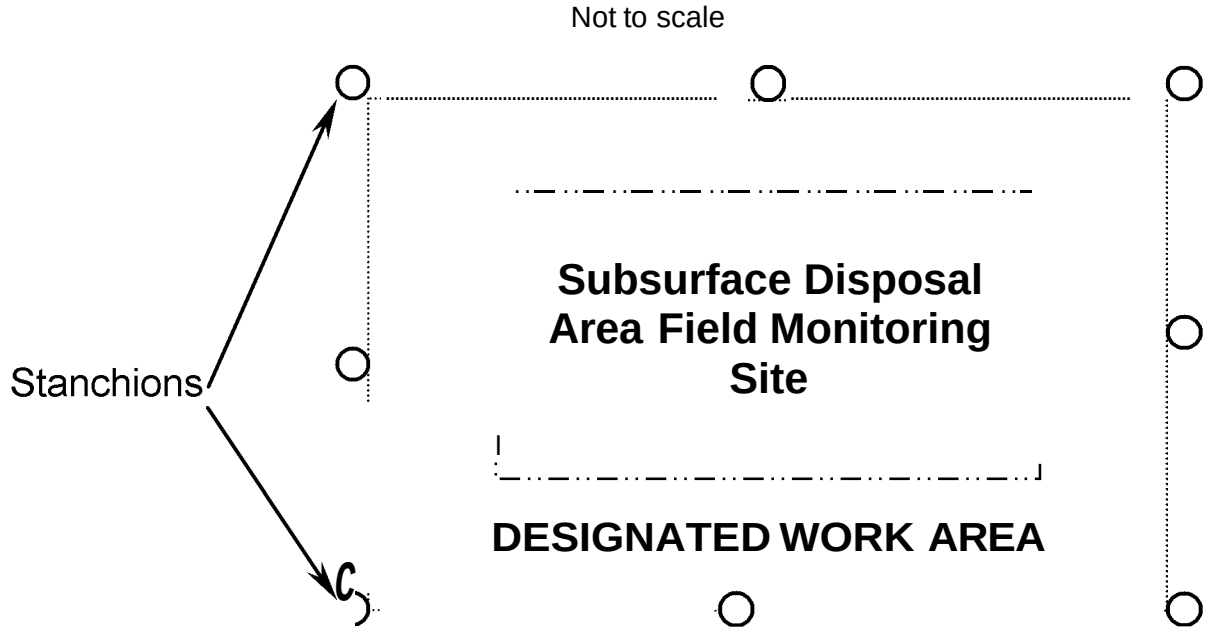


Figure 7-1. Example configuration for a filed monitoring designated work area in the Subsurface Disposal Area.

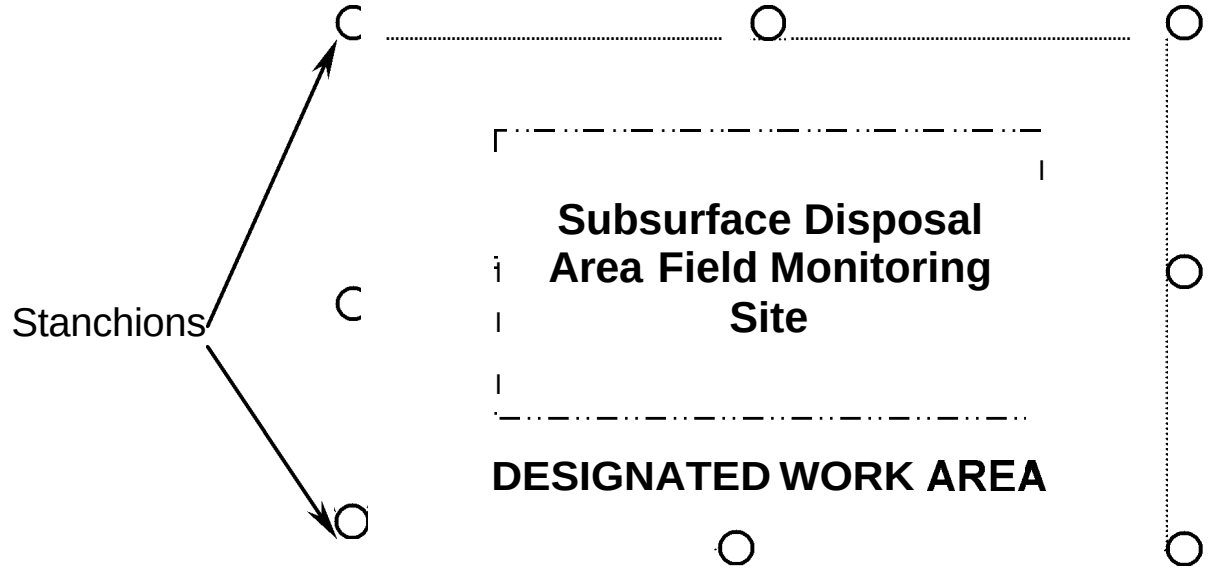


Figure 7-2. Configuration example for the construction area around a vapor vacuum extraction with treatment unit.

7.2 Radiologically Controlled Areas

The SDA is currently posted as a radiological buffer area. If additional radiologically controlled areas are required within the SDA for specific OCVZ operations or tasks, they will be established by RadCon personnel in accordance with MCP-187, "Posting Radiological Control Areas."

7.3 Radiologically Contaminated Material Release

If contaminated project equipment or materials are detected during OCVZ maintenance or monitoring tasks, then no equipment or materials will be released from the designated work area until required radiological surveys have been completed (e.g., hand-held instruments and swipes) in accordance with MCP-139, "Radiological Surveys," MCP-425, "Radiological Release Surveys, and the Disposition of Contaminated Materials," as stated in the RWP and as directed by RadCon personnel. Any contaminated and potentially contaminated PPE will then be containerized and stored in the area of contamination until fully characterized. All items (including PPE, equipment, and debris) generated during any decontamination process will be characterized in compliance with MCPs contained in Companywide *Manual 17 - Waste Management*.

7.4 Site Security

All OCVZ Project areas are secured and controlled with the existing RWMC fence and through appropriate posting to prevent entry into VVET unit operational areas. Additionally, INEEL security forces will provide general facility security in conjunction with RWMC operations.

Note: Signs are routinely lost because of high winds, but arel be replaced as soon as possible the next working day following discovery.

8. OCCUPATIONAL MEDICAL SURVEILLANCE

All OCVZ Project personnel shall participate in the INEEL OMP, defined in Program Description Document (PDD) -61, "Occupational Health Program," to implement requirements of DOE Order 440.1A, "Worker Protection Management for DOE Federal and Contractor Employees"; DOE Guide 440.1-4, "Contractor Occupational Medical Program for use with DOE Order 440.1"; and 29 CFR 1910.120(f). Medical surveillance examinations will be provided at the following times:

- Before assignment
- At least once every 12 months for each employee covered unless the attending physician believes a longer interval (not greater than biennially) is acceptable
- At termination of employment or reassignment to an area where the employee would not be covered if the employee has not had an examination within the last 6 months
- At more frequent times, if the examining physician determines that an increased frequency of examination is medically necessary
- Personnel who are or may be exposed to hazardous substances at or above the OSHA permissible exposure limit (PEL), or published exposure limits, without regard to respirator use for 30 or more days per year
- All employees who are injured, become ill, or develop signs or symptoms because of possible overexposure involving hazardous substances or health hazards from an emergency response or hazardous waste operation
- All employees who wear a respirator for 30 days or more a year or as required by 29 CFR 1910.134, "Respiratory Protection."

Personnel who wear a respirator in performance of their job, or who are required to take respirator training to perform their duties under this HASP, must participate in the medical evaluation program for respirator use at least annually, as required by MCP-2726.

If the OMP does not have sufficient information to complete a medical evaluation before respirator training, the employee's supervisor will be notified. The employee will not be permitted to fit test until the needed information is provided and any additional examination or testing is completed.

A single copy of the this HASP, applicable JSA requirements, required PPE, and other exposure-related information will be made available, on request, to the INEEL OMP physician (and subcontractor physicians) conducting medical surveillance for employees participating in OCVZ Project activities. Exposure monitoring results and hazard information furnished to the OMP physician will be supplemented or updated annually if required (as stated in Section 12) as long as the employee is required to maintain a hazardous waste and material employee medical clearance. The OMP physician n will then evaluate the physical ability of an employee to perform the work assigned.

The OMP physician shall evaluate the physical ability of personnel to perform the work assigned, as identified in this HASP, other project facility-related documentation, and individual training plans. A documented medical clearance (e.g., a physician's written opinion) will be provided to the employee and supervisor stating whether the employee has any detected medical conditions that would place him or her at increased risk of health impairment from project operations, emergency response operations, respirator

use, and radiological work, as applicable. The OMP responsibilities, with regard to personnel assigned to project operations include, but are not limited to, the following:

- Providing current comprehensive medical examinations (as determined by the examining physician) at an INEEL medical facility for full-time project operations personnel
- Obtaining records or reports from an employee's private physician, as required by the OMP director
- Performing a medical evaluation on return-to-work cases following an absence in excess of 1 work week (40 consecutive work hours) resulting from illness or injury
- Conducting a medical evaluation in the event that management questions the ability of an employee to work or if an employee questions his or her own ability to work.

Personnel are responsible for communicating any work or medical restrictions to their supervisor so that modified work assignments can be made if necessary. During the MCP-3003 prejob briefing, the supervisor conducting the briefing should ask workers if they have any work restrictions. However, it is the responsibility of each employee to inform the supervisor of any work or medical restrictions.

Note: All managers, supervisors and foreman have access to employees' current medical restrictions, certifications and surveillances through the OMP database on the Safety and Health homepage or OMP reports link: http://webhome4/OMPReports/ (INEEL 2003c). This allows management to review medical restrictions, surveillances, and certifications before assigning work tasks to employees.

8.1 Project Operations Subcontractor Workers

Where subcontractors provide direct operations, construction, or maintenance support for project activities or may be exposed to OCVZ-related hazardous substances or health hazards at or above the established permissible exposure limit for these substances without regard to the use of respirators for 30 days or more a year, they shall participate in an equivalent subcontractor medical surveillance program that satisfies the requirements of 29 CFR 1910.120(f). The physician's written opinion will serve as documentation that subcontractor personnel are fit for duty. Subcontractor personnel required to wear a respirator must have a current medical evaluation prior to donning the respirator.

Medical data from the subcontractor employee's private physician, collected pursuant to hazardous material worker qualification, shall be made available to the INEEL OMP physicians, upon request. A subcontractor employee's past radiation exposure history may be requested and, if so, will be submitted to the INEEL radiation dosimetry and records section, in accordance with MCP-188, "Issuance of Thermoluminescent Dosimeters and Obtaining Employees Dose History," and MCP-2381, "Employees Exposure Questionnaire," of the INEEL *Radiation Protection Manual*.

8.2 Injuries at the Operable Unit 7-10 Project Site

It is INEEL policy that an INEEL OMP physician examine all injured personnel for the following reasons:

- An employee is injured on the job
- An employee is experiencing signs and symptoms consistent with exposure to a hazardous material

- An employee is believed to have been exposed to toxic substances or physical or radiological agents in excess of allowable limits during the course of a project at the INEEL.

Note: In the event of an illness or injury, the decision to provide first aid and transport to the CFA medical facility (CFA-1612) or whether to immediately request an ambulance and continue to stabilize and provide first aid should be based on the nature of the injury or illness and likelihood that transporting the individual may cause hrther injury or harm. Most likely, the person making this decision will only be trained to the medic first aid or CPR level and should contact the CFA medical facility at 777 or 526-1515 for hrther guidance if there is any question as to the extent of injury or potential to cause hrther harm by movement of the iniured individual.

In the event of a known or suspected injury or illness caused by exposure to a hazardous substance or physical or radiological agent, the employee will be transported to the CFA medical facility (CFA-612) for evaluation and treatment. The HSO (or VVET technician if the HSO is not present) is responsible for obtaining as much of the following information as is available to accompany the individual to the medical facility:

- Name, job title, work location, and supervisor's name and phone number
- Substance, physical or radiological agent exposed to (known or suspected), and material safety data sheet, if available
- Nature of the incident and injury or exposure, and associated signs or symptoms of exposure
- First aid or other measures taken
- Locations, dates, and results of any relevant personal or area exposure monitoring or sampling
- List of PPE worn during this work (e.g., type of respirator and cartridge used).

Further medical evaluation will be determined by the treating or examining physician in accordance with the signs and symptoms observed, hazard involved, exposure level, and specific medical surveillance requirements established by the OMP director in compliance with 29 CFR 1910.120.

Note: In the event of an illness or injury to a subcontractor employee, they will be taken to the closest INEEL medical facility (CFA-1612) (unless doing so will not cause hrther injury or harm) or be transported by INEEL ambulance to have an injury stabilized before transport to the subcontractor's treating physician or off-Site medical facility.

The RWMC shift supervisor will be contacted if any injury or illness occurs within project operational areas. As soon as possible after an injured employee has been transported to the INEEL medical facility, the shift supervisor or designee will make additional notifications listed in Section 10.

Radiological Control personnel will evaluate all actual and suspected radiological exposures in excess of allowable limits and will establish follow-up actions. For internal uptakes (as calculated committed effective dose equivalent values), the "Established Levels of Radionuclide Intake for Consideration of Medical Intervention" (LMITCO 1991) will be used as the basis for this evaluation and follow-up actions. All wounds will be examined by an OMP physician to determine the nature and extent of the injury. The RadCon supervisor in conjunction with an OMP physician will determine whether the

wound can be bandaged adequately for entry into a radiological contamination area in accordance with Article 542 of the RCM (PRD-183).

8.3 Substance-Specific Medical Surveillance

Project personnel have minimal contact with the waste constituents being treated by the VVET units. The FTIR area monitoring and IH air sampling for chlorinated compounds has demonstrated that exposure concentrations in the general SDA area and inside the units are negligible. Although methylene chloride is covered by an OSHA substance-specific standard (29 CFR 1910.1052, "Methylene Chloride") that governs the manner that personnel monitoring and medical surveillance is conducted, measured concentrations are well below the methylene chloride standard 12.5-ppm action level, therefore, no additional medical surveillance requirements are needed.

All OCVZ Project activities are evaluated to determine the hazards and potential exposures to personnel in accordance with PRD-25, "Activity Level Hazard Identification, Analysis, and Control," and STD-101. The IH and RadCon personnel will conduct exposure assessments for each operation to determine the potential for exceeding exposure limits. The regulatory requirements for each OSHA-mandated substance-specific standard will be reviewed against exposure monitoring data (where available) and in the context of the exposure potential using professional judgment.

If new OCVZ Project waste compounds are identified or chemicals are introduced during the course of project activities, then exposures will be evaluated and quantified to determine whether a substance-specific standard applies. If regulatory-mandated substance-specific standard-action levels are triggered, then affected personnel will be enrolled in applicable substance-specific medical surveillance programs. If OCVZ Project tasks involve carcinogens, then MCP-2703, "Carcinogens," requirements will be followed.

All exposures to ionizing radiation will be evaluated in accordance with the RCM and, where deemed appropriate, will be controlled by using an RWP in accordance with MCP-7, "Radiological Work Permit."

8.4 Wash Facilities and Sanitation

Project sampling and maintenance activities where OCVZ systems are opened present a potential for encountering trace amounts of waste chemical compounds or radiological contamination. Personnel will obey all radiological survey requirements to prevent inadvertent uptakes of radiological or chemical contaminants. Ingestion of hazardous substances is more likely when workers do not practice good personal hygiene habits during and following these activities in the SDA. It is important to wash hands, face, and other exposed skin areas thoroughly after completion of work and before smoking, eating, drinking, or chewing gum or tobacco.

Sanitation and shower facilities will be available for OCVZ Project personnel within RWMC operations areas such as Waste Management Facility (WMF) -657, WMF-601, and WMF-637.

Note: No smoking, chewing, eating, applying lip balm, or drinking is allowed within CERCLA-regulated areas and radiologically controlled areas (SDA).

8.5 Designated Eating Areas and Smoking Area

The designated eating areas for operations personnel will be established in the RWMC operations areas and also include the other RWMC designated eating areas (located in WMF-637).

Smoking will be permitted only in designated smoking areas outside the OCVZ Project CERCLA-regulated areas. Personnel will comply with all INEEL smoking polices, including disposal of smoking materials in the proper RWMC receptacles. All GDE-7063, "INEEL Wildland Fire Management Guide," requirements related to smoking at the INEEL will be practiced

9. PERSONNEL ROLES AND RESPONSIBILITIES

The organizational structure for OCVZ Project operations reflects the resources and expertise required to operate and maintain VVET units, as well as conduct required sampling and analysis tasks while minimizing risks to worker health and safety, the environment, and the general public. Job titles of the individuals in key OCVZ Project roles are shown on the organizational chart in Figure 9-1. The OCVZ organization includes primary operations personnel, such as project management; VVET technicians; engineering; planning; assigned hnctional support for environmental, safety, industrial hygiene, and quality assurance; and facility and vendor support personnel. The VVET technician and project manager will interface to determine the most appropriate use of these resources.

Plan (PLN)-694, "Project Execution Plan for the Balance of INEEL Cleanup Project," provides additional information on OCVZ personnel roles and responsibilities. In addition, PDD-1005, "INEEL Line Management and Operations Manual," describes roles and responsibilities including project directors, operations directors, NFMs, and other positions under the Balance of INEEL Cleanup Project. The intent with this project organization chart and position descriptions is to define OCVZ Project-level (project manager down) roles and responsibilities to meet 29 CFR 1910.120-HAZWOPER requirements and not to define responsibilities addressed in PLN-694 and PDD-1005.

9.1 Operable Unit 7-08 Organic Contamination in the Vadose Zone Project Personnel

9.1.1 Operable Unit 7-08 OCVZ Remediation Project Manager

The project manager is responsible for ensuring that all activities conducted during this project comply with INEEL MCPs, PRDs, and all applicable OSHA, EPA, DOE, U.S. Department of Transportation, and State of Idaho requirements. The project manager also ensures that tasks comply with the *Quality Assurance Project Plan for WAGs 1, 2, 3, 4, 5, 6, 7, 10, and Inactive Sites* (DOE-ID 2002); PLN-694, "Project Management Plan, Environmental Restoration Program Management," and the *Field Sampling Plan for Operations and Monitoring Sampling Conducted in Support of the Organic Contamination in the Vadose Zone Remediation Project* (Housley 2003). The project manager coordinates all document preparation and field, laboratory, and modeling activities, and is responsible for the overall scope, schedule, and budget of the project. Additionally, the project manager interfaces with the Clean and Close RWMC project director and RWMC operations director to provide status of the project and to define formal interface agreements (e.g., interface agreement between RWMC and Balance of INEEL Cleanup [IAG-201). Additional responsibilities are defined in PLN-694.

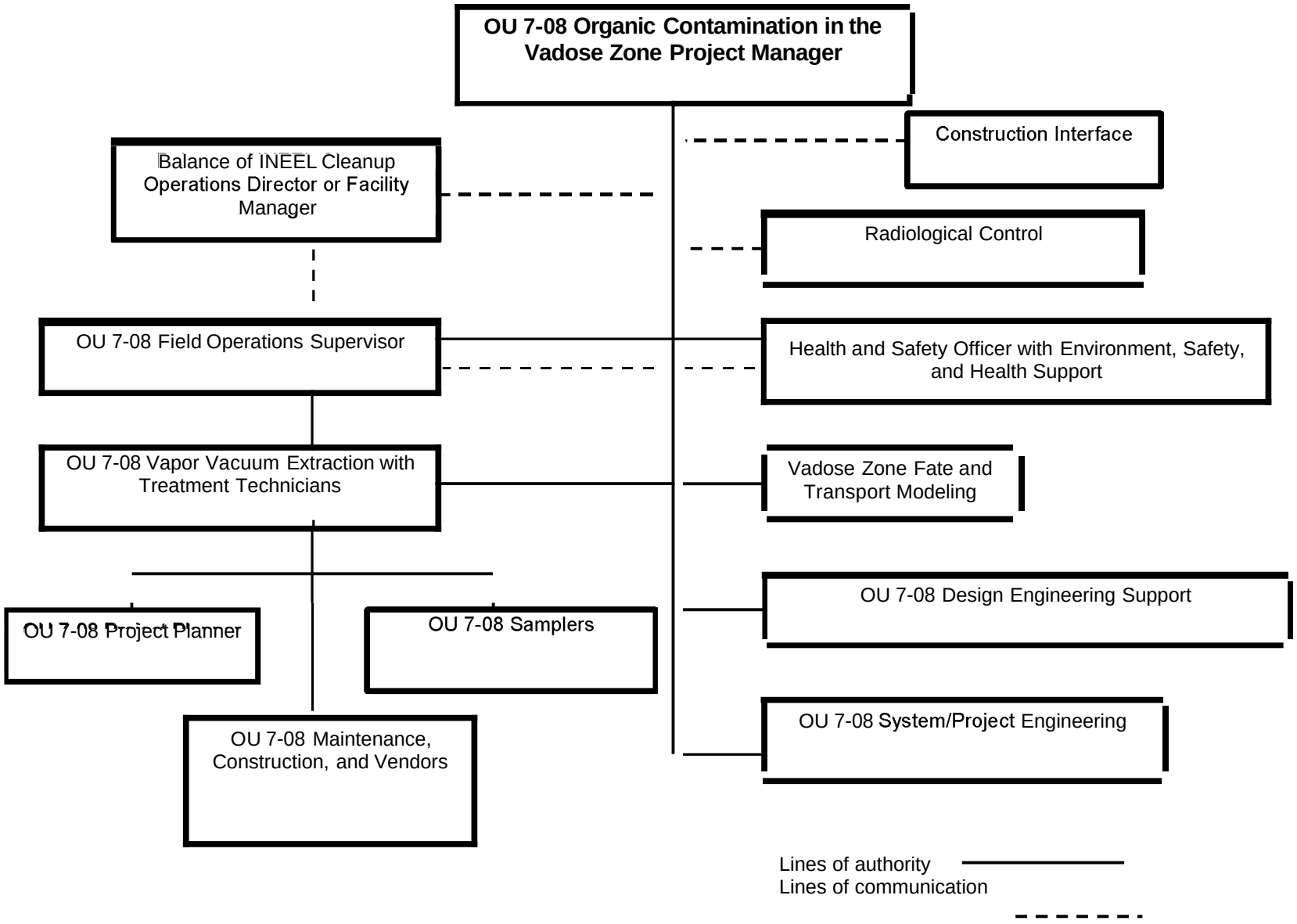


Figure 9-1. OU 7-08 Organic Contamination in the Vadose Zone Project organizational chart

9.1.2 Operable Unit 7-08 System/Project Engineer

The system or project engineer is responsible for serving as the single point of contact for the project manager to resolve technical issues for each assigned VVET job from initiation to completion. The system or project engineer provides weekly and monthly reports to the project manager on VVET system accomplishments, planned activities, and issues, with input from technicians, planners, and samplers; provides technical review and approval of corrective maintenance, preventive maintenance, and predictive maintenance work control documents; and coordinates with assigned engineering personnel to complete configuration control and design criteria requirements for work orders that implement system structure and component modifications. Additional responsibilities are defined in PLN-694.

9.1.3 Vapor Vacuum Extraction with Treatment Operations Field Technician Lead

The VVET operations field technician lead is responsible for ensuring safe, efficient, reliable, and compliant VVET system operation including coordinating and providing oversight for day-to-day VVET field activities and acting as the primary point of contact for access to the VVET system operation. The VVET field technician lead also is responsible for interfacing with RWMC, construction, and vendor support personnel to ensure all construction and maintenance activities are conducted in accordance with this HASP. The lead technician also assigns work activities to other VVET technicians and delegates lead technician responsibilities when unavailable.

9.1.4 Vapor Vacuum Extraction with Treatment Operations Field Technicians

The VVET field technicians are responsible for performing routine surveillance and operational checks, including completion of the daily round sheets and operating logbooks. They provide input to the planner for work orders, in accordance with STD-101, "Integrated Work Control Process," for VVET system maintenance and upgrades and oversight and support for W E T system monthly, quarterly, subcontractor, and annual preventive maintenance; VVET system corrective maintenance, upgrades, and instrument calibrations; maintaining and tracking VVET system spare parts inventory; planning, scheduling, and providing oversight for VVET system operations waste management activities.

9.1.5 Operable Unit 7-08 Planner

The planner is responsible for preparing work control documents as required for operations and construction work and ensuring that input to work orders is obtained from the system or project engineer and that field walkdowns are conducted by, at a minimum, the system engineer or project engineer or designee, safety representative, quality representative, and RWMC representative, as required. The planner also tracks the status of work-control documents and orders, stores, and maintains an inventory of spare parts, as identified by the system or project engineer.

9.1.6 Operable Unit 7-08 Vadose Zone Sampler

The vadose zone sampler is responsible for performing monthly and quarterly sampling of vapor monitoring wells; VOC analysis on VVET daily operational samples and monthly and quarterly well-vapor samples; maintaining sampling equipment (e.g., pumps and vapor ports) and analytical equipment (i.e., Bruel & Kjar and gas chromatograph); reporting operational sample results to assigned engineering personnel to support mass-loss calculations, and reporting well-vapor data to assigned engineering personnel to support development of well-vapor trending reports and annual well-monitoring reports.

9.1.7 Vadose Zone Fate and Transport Modeler

The vadose zone fate and transport modeler is responsible for developing and maintaining the OU 7-08 vadose zone fate and transport model; calibrating the OU 7-08 vadose zone model to subsurface gas pressure data, operations removal data, subsurface monitoring data, and inventory data; conducting vadose zone model sensitivity and uncertainty analyses; and providing technical input to the project manager to support the OCVZ operations strategy.

9.1.8 Environment, Safety, Health, and Quality Assurance Personnel

9.1.8.1 Health and Safety Officer. The OCVZ Health and Safety Officer (HSO) is the person assigned to the task site as the primary contact for health and safety issues. The HSO advises the VVET Operations Field Technician Lead on the safety and health aspects of the OCVZ tasks, and is authorized to stop work at the task site if any operation threatens worker or public health or safety. The HSO may be assigned other responsibilities, as stated in other sections of this HASP, as long as they do not interfere with the primary responsibilities of safety and health. The HSO will be supported as needed by industrial safety, industrial hygiene, environmental, and quality assurance support personnel. The HSO duties will be performed by the VVET Field Technician Lead or VVET Field Technician if the primary health and safety officer is not on site.

9.1.8.2 Safety Professional. The assigned OCVZ Project safety professional reviews work packages, observes operational activities, assesses compliance with the INEEL safety and health manuals, signs SWPs, advises the VVET technician on required safety equipment, answers questions on safety issues and concerns, and recommends solutions to safety issues and concerns that arise during operations. The safety professional may conduct periodic inspections in accordance with MCP-3449, "Safety and Health Inspections," and may have other duties at the task site as specified in other sections of this HASP, or in INEEL PRDs or MCPs. Additionally, the safety professional will support OCVZ Project management by investigating accidents and injuries and preparing written reports to project and hnctional management, hazard identification, and appropriate mitigation efforts.

9.1.8.3 Industrial Hygienist· The assigned OCVZ IH is the primary source for information about nonradiological hazardous and toxic agents during operations. The IH assesses the potential for worker exposures to hazardous agents in accordance with the INEEL safety and health manual MCPs, and accepted industry IH practices and protocol. By participating in work control development and approval process, the IH assesses and recommends appropriate hazard controls for the protection of operations personnel, operates and maintains airborne sampling and monitoring equipment, reviews for effectiveness, and recommends and assesses the use of PPE required in this HASP (recommending changes as appropriate).

9.7.8.4 Quality Assurance Engineer. Duties and responsibilities of the quality assurance engineer include implementing internal quality monitoring, assessment, and surveillance by establishing and maintaining an internal assessment and monitoring schedule; reviewing design and performance specifications and other design documents to determine if quality requirements are properly included; and ensuring quality assurance compliance is achieved in accordance with applicable requirements established by the company, DOE, state, and federal regulations.

9.1.8.5 Environmental Engineer. Responsibilities of the environmental engineer include providing overall technical expertise with respect to regulatory issues, natural and cultural resources, and risk assessment for the OCVZ Project. The environmental engineer identifies environmental and regulatory issues that affect operations, and develops solutions in coordination with the OCVZ Project engineer and other project task leads. The environmental engineer also works with the project task leads

and management to develop appropriate mitigation measures that minimize potential noncompliance with environmental requirements when environmental issues are identified.

9.1.9 Radiological Control

9.1.9.1 Radiological Engineer. The radiological engineer provides radiological engineering support within the project. Specific duties and responsibilities include acting as point of contact for all radiation protection issues related to the project, ensuring that radiological hazards are identified and appropriate controls are implemented to maintain worker exposure to those hazards ALARA, and identifying conditions that may impede implementation of company standards for safety, quality, and operations and maintenance. The radiological engineer is also responsible for initiating actions to correct conditions, including stopping work if necessary, that adversely impact safety, quality, or operations and maintenance.

9.1.9.2 Radiological Control Technicians. Radiological control technicians report directly to the facility RCT foreman, and are responsible for ensuring compliance with the INEEL RadCon program within the OCVZ Project areas, including acting as a RadCon information resource for project personnel. Also, during emergencies, RCTs are responsible for stopping work or ordering an area evacuated when an imminent radiation hazard exists and such actions are necessary to ensure worker safety.

9.1.10 Maintenance, Construction, and Vendor Support Personnel

9.1.10.1 Laborers and Heavy Equipment Operators. Specific duties and responsibilities include operating heavy equipment, forklifts, and industrial vehicles to transport equipment and components to the site to support construction and maintenance activities.

9.1.10.2 Mechanics and Instrument Technicians. Maintenance personnel are responsible for maintenance and repair of project operations mechanical and electrical equipment. Personnel in this category include all maintenance crafts (e.g., electricians, mechanics, pipe fitters, instrument technicians, carpenters), life-safety-systemstechnicians, and associated line management. The VVET technicians are responsible for specific maintenance and monitoring activities that include equipment maintenance, troubleshooting, repair, testing, instrument calibration, inspections, and data surveys.

9.1.10.3 Construction Support Personnel. Construction support personnel will be used for VVET upgrades and maintenance activities where required. Construction support may include, but is not limited to, equipment operators, hoisting and rigging, laborers, and similar construction trades. The VVET technician will serve as the interface for all construction personnel at the OCVZ site.

9.7.70.4 Vapor Vacuum Extraction with Treatment Unit Vendors. Vendors provide VVET components, upgrade equipment, structures, and propane for the existing thermal oxidation unit. The VVET technician will serve as the interface for all vendor personnel at the OCVZ site.

9.1.11 Visitors

All visitors with official business in the OCVZ Project operational areas (including INEEL personnel, representatives of DOE, and state or federal regulatory agencies) may not proceed beyond the RWMC operational area without having the appropriate training (see Table 6-1) and as described below:

- Receiving OCVZ HASP training or an orientation briefing for the area to be accessed
- Signing applicable entry logs and work control documents (for the area to be accessed)

- Wearing the appropriate PPE.

A VVET technician will escort visitors entering the project operational areas.

Note 1: Visitors may not be allowed into OCVZ areas during certain activities such as construction or maintenance to minimize safety, health and radiological hazards to the visitor(s). The determination as to any visitor's demonstrated need for access into the OCVZ Project area will be made by the VVET technician in consultation with assigned safety and health professionals and RadCon personnel.
Note 2: Visitors with no official business at OCVZ Project areas will not be permitted to enter project areas.

10. EMERGENCY RESPONSE PLAN

This emergency response plan defines the roles and responsibilities of OCVZ Project personnel during an emergency. Such an emergency could be within the OCVZ Project area, at the RWMC, or a Sitewide emergency. This section provides emergency plan contingencies at a project level and is mandated by 29 CFR 1910.120. The "INEEL Emergency Plan RCRA Contingency Plan" (PLN-114) describes the overall process developed to respond to and mitigate consequences of emergencies that might arise at the INEEL including at the RWMC. This section defines the responsibilities of project personnel and their interface with the INEEL Emergency Response Organization (ERO) by providing guidance for responding to abnormal events during OCVZ Project activities.

Plan-1 14 may be activated in response to events occurring at the RWMC, at OCVZ Project locations, or at the discretion of the emergency coordinator. Once the INEEL plan is activated, project personnel will follow the direction and guidance communicated by the RWMC emergency coordinator.

Note: The **OSHA** HAZWOPER definition of an "emergency" is not defined the same as in DOE Orders 151.lA, "Comprehensive Emergency Management System"; and 232.1, "Occurrence Reporting and Processing of Operations Information." For this reason, the term "event" will be used in this section when referring to OCVZ Project HAZWOPER type emergencies.

10.1 Preemergency Planning

The INEEL Emergency Plan RCRA Contingency Plan provides the basis for preplanning all INEEL emergency events. This base plan is supplemented with INEEL facility-specific addendums. This preplanning makes it possible for the project to anticipate and appropriately respond to abnormal events that can affect operational activities. Specific procedures for addressing emergency events and actions to be taken are hrther described in the RWMC Addendum 3 to PLN-114. Finally, this HASP addresses operational-specifichazards, potential emergency events, and the protective actions to take following such events. Emergency response program planning elements that must be completed before the initiation of project operations include the following:

- Establishing emergency warning signals and evacuation routes
- Establishing effective site communications
- Establishing requirements for emergency equipment and supplies
- Implementing personnel accountability procedures
- Identifying an adequate number of CPR and medic first-aid trained personnel
- Establishing the preferred means for notifying the INEEL ERO of abnormal events.

Note: All project events will be reported through the RWMC shift supervisor to the ERO for classification in accordance with Section 4 of PLN-114. If the RWMC ERO is activated, site emergency response will follow PLN-114, RWMC Addendum 3 (PLN-114-3).

10.2 Emergency Preparation and Recognition

The HASP sections for hazards identification and mitigation (Section 2) and accident prevention (Section 4) provided the strategy that will be followed at OCVZ Project areas to prevent accidents. Similarly, emergency preparation and recognition will also require operations personnel to be constantly alert for potentially hazardous situations and signs and symptoms of chemical exposure or releases. All project personnel should be familiar with the techniques for hazard recognition and the associated response including proper operational notifications. Project emergency phone numbers and RWMC evacuation route maps are located in the back of this section.

Preparation and training on emergencies will include proper project access and egress procedures in response to project operational events and INEEL emergencies as part of the HASP training and project operations area access training, where applicable. Visitors will also receive a briefing on emergency procedures during the hazard, general operations orientation briefing (see Table 10-2), and potentially complete HASP training depending on the project operations area to be accessed. Visitor emergency actions briefing will include alarm identification, location and use of communication equipment, location of site emergency equipment, and evacuation.

On-scene response to and mitigation of operational emergencies could require the expertise of INEEL fire department, medical, and security personnel. Emergencies that could occur include the following:

- Accidents resulting in injury
- Fires
- Spills of hazardous or radiological materials
- Tornadoes, earthquakes, and other adverse natural phenomena
- Vehicle or transportation emergencies
- Safeguard and security emergencies
- Emergencies at nearby facilities that could prompt evacuation or take-cover actions at the task site.

10.3 Emergency Facilities and Equipment

Emergency response equipment, including the items described in Table 10-l, will be maintained at each VVET unit. The RWMC PLN-114 Addendum 3 (PLN-114-3) lists emergency equipment available at RWMC. This includes the emergency command post located in WMF-637 and equipment located in WMF-601 for radiological emergencies at RWMC. Additional heavy construction and other equipment listed in PLN-114-3 are available for use during emergencies.

The INEEL fire department maintains an emergency HAZMAT response van that can be used to respond to an event or emergency within the project operations areas. Fire department personnel also are trained to provide immediate hazardous material spills and medical services. Additionally, the CFA-1612 medical facility is manned by medical personnel to evaluate and stabilize injured personnel or those experiencing signs and symptoms of exposure. At least one individual with current medic and first-aid training will be present during normal project operations.

Table 10-1. Emergency response equipment to be maintained at the vapor vacuum extraction with treatment units.

Equipment Name and Quantity Required	Location	Responsible Person	Frequency of Inspection
Fire extinguishers"	VVET unit	VVET Technician	Monthly.
First aid kit	VVET unit	VVET Technician	Inspect monthly and sign tag. Pull from service if seal is broken, and replace in accordance with MCP-2559.
Eye wash bottle[b]	VVET units or project vehicle when sampling	VVET Technician	Monthly or replace after use.
Communication equipment available (radio or cellular phone)	In possession of personnel entering OCVZ and VVET operational areas in the SDA	VVET Technician	Availability and daily hnctional check.

a. 10A/60BC extinguishers or as specified by the RWMC fire protection engineer.
b. An eye wash bottle will be used to provide an immediate eye flush if required. Portable eye wash stations that meet the ANSI Z 358.1-1998 (ANSI 1998) requirement are available in the heated ER SDA cargo container. Employees are instructed to use the bottles and immediately proceed (with assistance) to the permanent eye wash station. Separate eye wash stations will be located withm 100-ft or 10 seconds from significant eye hazard operations as determined by the IH and safety professional.

ANSI = American National Standards Institute
IH = industrial hygienist
MCP = management control procedure
OCVZ = organic contamination in the vadose zone
RWMC= Radioactive Waste Management Complex
VVET = vapor vacuum extraction with treatment

10.4 Emergency Communications

In the event of an emergency, capability to perform the following actions is required:

- Summon INEEL emergency response resources
- Immediately notify operations personnel
- Inform others of the emergency.

Communications equipment available to project personnel includes a combination of radios, telephones (i.e., mobile, cellular, or landline), and pagers. The RWMC shift supervisor and others will be notified as described below.

10.4.1 Notifications

Following a project emergency event, the RWMC shift supervisor will be notified. The RWMC shift supervisor will then make the required ERO and WCC notifications in accordance with PLN-114. The following information should be communicated, as available, to the RWMC shift supervisor:

- The caller's name, title (e.g., W E T technician), telephone number, and pager number
- Exact location of the emergency
- Nature of the emergency including time of occurrence, current site conditions, and special hazards in the area
- Injuries, if any, including numbers of injured, types of injuries, and conditions of the injured personnel
- Emergency response resources required (e.g., fire, hazardous material, and ambulance)
- Additional information as requested.

Note: If the RWMC shift supervisor cannot be contacted, then the WCC will be notified (777, 526-1515) of the emergency event and the information listed above will be communicated. The WCC also must be told that notification to the RWMC shift supervisor and emergency coordinator has not been made.

10.5 Personnel Roles, Lines of Authority, and Training

10.5.1 Idaho National Engineering and Environmental Laboratory Emergency Response Organization

The INEEL ERO structures are based on the incident command system and are described in PLN-114-3 and Addendum 3 to that plan.

10.5.2 Role of Organic Contamination in the Vadose Zone Project Personnel in Emergencies

Depending on the event, a graded response and subsequent notifications will take place. The VVET technician and other personnel responsibilities are described below. All OCVZ personnel will respond to emergencies only within the limits of their training and as designated by their position. All personnel are trained in RWMC-specific emergency actions as part of RWMC-access training or will be escorted by someone who has been trained. Emergency response actions will also be covered as part of the HASP training and project orientation briefing (for visitors).

10.5.2.1 Vapor Vacuum Extraction with Treatment Technician. The VVET technician is responsible for initiating all requests for emergency services (e.g., fire and medical) and for notifying the RWMC shift supervisor of abnormal or potential abnormal events occurring within the OCVZ Project areas. In addition, the VVET technician or trained alternate will serve as the area warden. The area warden is responsible for conducting personnel accountability for all OCVZ areas. This will be accomplished by completing positive sweeps of all VVET units and surrounding OCVZ SDA areas to ensure personnel are aware of the emergency event. Following notification of the emergency event, operations personnel will be directed to the designated assembly point where the attendance log (or

equivalent) will be used to determine what personnel are onsite (role call). The VVET technician then will report accountability status to the RWMC shift supervisor, who will in turn communicate this information to the RWMC emergency coordinator.

Additionally, the VVET technician will control the scene of any emergency event (from a safe distance) until a member of the Incident Command System authority arrives at the scene to take control as the on-scene commander. When communicating emergency information to the on-scene commander, the VVET technician will provide all requested information about the nature of the event, potential hazards, and other information requested by the on-scene commander.

70.5.2.2 Organic Contamination in the Vadose Zone Assigned Personnel. Every person within the OCVZ Project area during an operations emergency event or INEEL emergency has a role to play. Personnel must be constantly aware of potential problems or unexpected hazardous situations and immediately report these situations to the VVET technician. All personnel are expected to assist with accountability when required, to report near misses and emergency events of concern to the VVET technician, and to respond to emergency events in accordance with requirements of this HASP. Specific personnel responsibilities are outlined in Table 10-2.

Table 10-2. Responsibilities during an emergency.

Responsible Person	Action Assigned
VVET technician or designee	Contact the RWMC shift supervisor.
Any fire-extinguisher-trained worker	Extinguish fires (incipient fires only) or contain spills (within level of training).
Any medic first aid and CPR-trained personnel	Provide first aid within level of training (on a voluntary basis).
VVET technician or designee	Contact the RWMC shift technical lead or emergency coordinator (if emergency coordinator has formed).
VVET technician or designee	Contact the INEEL Site emergency telephone number or the WCC (if RWMC shift technical lead cannot be contacted).
VVET technician or designee	Conduct personnel accountability and report information to the RWMC shift technical lead or emergency coordinator.
VVET technician or designee	• Report incipient fires to the INEEL fire department • Report spills to the INEEL spill notification team.
Assigned IH	Report occupational injuries or illnesses to the OMP.

CPR = cardiopulmonary resuscitation
IH = industrial hygienist
INEEL = Idaho National Engineering and Environmental Laboratory
OMP = Occupational Medical Program
OU = operable unit
RWMC = Radioactive Waste Management Complex
WCC = Warning Communications Center

10.5.2.3 Personnel Accountability and Area Warden. The OCVZ Project operations personnel may be required to TAKE COVER within the project area or to evacuate the SDA or RWMC in response to an EVACUATION. In each case, the VVET technician or trained alternate shall account for personnel in OCVZ operations area (e.g., VVET units and surrounding SDA area). The VVET technician or trained alternate will serve as the area warden, complete the personnel accountability (following positive sweeps

of area), and report the results to the RWMC shift supervisor. The RWMC shift supervisor will make hrther notifications.

70.5.2.4 Spills. If the material spilled is known and is small enough to be safely contained, project operations personnel will handle spill control within their level of training (as described below) using spill supplies in the project operational area. The spill will be immediately reported to the RWMC shift supervisor. Reporting requirements will be determined by the RWMC emergency coordinator in accordance with MCP-190, "Event Investigation and Occurrence Reporting." If any release of a hazardous material occurs, task-site personnel will comply with the following immediate spill response actions.

10.5.2.4.1 Untrained *Initial* Responder — The requirements for the untrained initial responder (or if the material characteristics are unknown) are listed below:

- Place equipment in a safe configuration (as applicable)
- **Evacuate** and **isolate** the immediate area
- Notify and then **seek help** from and **warn** others in the area
- Notify the RWMC shift supervisor.

70.5.2.5 Trained *Responder.* The requirements for the trained responder where material characteristics are known and no additional PPE is required are listed below:

- Place all equipment in a secure configuration (as applicable)
- **Seek help** from and **warn** others in the area
- **Stop** the spill if it can be done without risk (e.g., returning the container to the upright position, closing valve, and shutting off power)
- **Provide** pertinent information to the RWMC shift supervisor
- **Secure** any release paths if safe to do so.

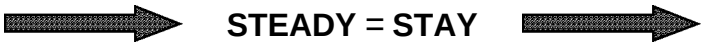
10.6 Emergency Alerting, Responses, and Sheltering

10.6.1 Alarms

Alarms and signals are used at the RWMC and INEEL to notify personnel of abnormal conditions requiring a specific response. These include radiation-monitoring alarms denoted by fast ringing bells and fire alarms that may vary from building to building within the RWMC and OCVZ Project areas. Responses to these alarms are addressed in the general employee and RWMC access training. In addition to these alarms, emergency sirens located throughout the RWMC serve as the primary means for signaling emergency TAKE COVER or EVACUATION protective actions.

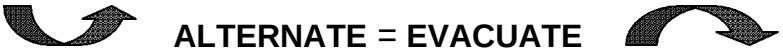
10.6.1.1 Take Cover — Continuous Siren. Radiation or hazardous material releases, adverse weather conditions, or other event or emergency conditions may require that all project personnel take cover indoors in the nearest building. A TAKE COVER protective action may be initiated as part of a broader response to an emergency situation and may precede an evacuation order. The order to TAKE

COVER is usually announced by activating the emergency siren. The signal to take cover is a CONTINUOUS (steady) SIREN. The order to TAKE COVER is usually announced by activating the RWMC emergency siren.



TAKE COVER also can be given by word of mouth, radio, or voice paging system. When ordered to TAKE COVER, project personnel will place equipment (construction or maintenance) in a safe configuration (as applicable) and then seek shelter in project administrative buildings, vehicles, or VVET unit (if outdoors). Eating, drinking, and smoking are not permitted during take-cover conditions.

10.6.1.2 Total Area Evacuation—Alternating Siren. A total area evacuation is the complete withdrawal of personnel from the entire OCVZ operations and RWMC areas. The evacuation signal is an ALTERNATING SIREN.



When ordered to EVACUATE, personnel will place project operations equipment (construction or maintenance) in a safe configuration (as applicable) and then proceed along the specified RWMC evacuation route to the designated assembly area (WMF-637) or as directed by the emergency coordinator. For total area evacuations, the RWMC command post is activated and all personnel will gather at the primary RWMC evacuation assembly area (WMF-637 parking lot) or the location designated by the emergency coordinator. The emergency action manager or trained alternate will then complete the personnel accountability and report the result of the accountability process to the RWMC emergency coordinator.

10.6.1.3 Local Area (Organic Contamination in the Vadose Zone Operations Area) Evacuation. A local area evacuation is defined as the complete withdrawal of personnel from a VVET unit or portion of OCVZ Project areas, but it does not necessarily require the complete evacuation of the entire RWMC. An example would be a fire in one of the VVET units. The order to evacuate the immediate area would be given by word of mouth or by radio communication. When ordered to evacuate, project personnel shall place equipment in a safe condition (unless doing so would hrther endanger personnel) and then proceed to the designated assembly area or place of safe refuge if the evacuation route cannot be accessed based on the emergency event. The VVET technician then will conduct personnel accountability and report the emergency event to the RWMC shift supervisor as described above. Eating, drinking, and smoking are not permitted during emergency evacuations. Radiological Control personnel will assist and direct all workers exiting from radiological contamination areas during a local area evacuation alarm.

10.7 Evacuation Assembly Areas and Central Facilities Area Medical Facility

The RWMC maintains primary and secondary evacuation routes and assembly areas. These routes may be used in response to a total facility evacuation as directed by the RWMC emergency coordinator. Copies of the following figures will be available in the project operations area. Figure 10-1 shows the RWMC evacuation and assembly areas, Figure 11-1 contains a map showing the location of CFA-1612 medical facility.

In the event that the project operational area is evacuated, personnel shall assemble in the designated assembly area, or as directed by the W E T technician (local area evacuation) or RWMC emergency

coordinator. If a total area evacuation of the RWMC is ordered, then project personnel shall relocate to the RWMC primary evacuation assembly area (see Figure 10-1) or as directed by the emergency coordinator.

10.8 Medical Emergencies and Decontamination

Medical emergencies and responses to injuries or suspected exposures will be handled as stated in Section 8.2. Decontamination of personnel and equipment is described in Section 11.2.

10.9 Reentry, Recovery, and Site Control

All reentry and recovery activities will follow general Site security and control requirements identified in Section 7 unless conducted as part of an emergency response action. All entries into OCVZ Project areas performed in support of emergency actions will be controlled by the on-scene commander.

10.9.1 Reentry

During an emergency response, it is sometimes necessary to reenter the scene of the event. Reasons for performing a reentry may include:

- Performing personnel search and rescues
- Responding to medical first-aid needs
- Performing safe shutdown actions of operational equipment or processes
- Performing mitigating actions
- Evaluating and preparing damage reports
- Performing radiation or hazardous material surveys

Reentries will be carefully planned to ensure that personnel are protected from harm and to prevent initiating another emergency event. Reentry planning is undertaken on a graded approach and will be based on the nature of the initiating event, hazards to personnel and structures, and purpose for the reentry.

10.9.2 Recovery

After the initial corrective actions have been taken and effective control established, response efforts will shift toward recovery. Recovery is the process of (1) assessing post-event and post-emergency conditions, (2) developing a plan for returning to preevent and preemergency operating conditions, when possible, and (3) following the plan to completion. The RWMC emergency coordinator, in consultation with the RWMC NFM, OCVZ Project manager, and RWMC operations director are responsible for determining when an emergency situation is sufficiently stable to terminate the emergency and enter the recovery phase. The NFM, with concurrence from the operations manager and in consultation with the RWMC operations director, will appoint the recovery manager.

Where a restart of OCVZ Project operations is required following a shutdown, all applicable operational restart requirements of MCP-2783, "Startup and Restart of Nuclear Facilities," or MCP-1126, "Performing Management Self-Assessments for Readiness," will be followed.

10.10 Critique of Response and Follow-up

A review and critique will be conducted following all emergency events, drills, and exercises at the INEEL. In some cases, an investigation may be required before commencing recovery actions. For this reason, care should be exercised to preserve evidence when appropriate. The RWMC NFM or OCVZ Project manager will lead all critiques of OCVZ events requiring a critique in accordance with PLN-114.

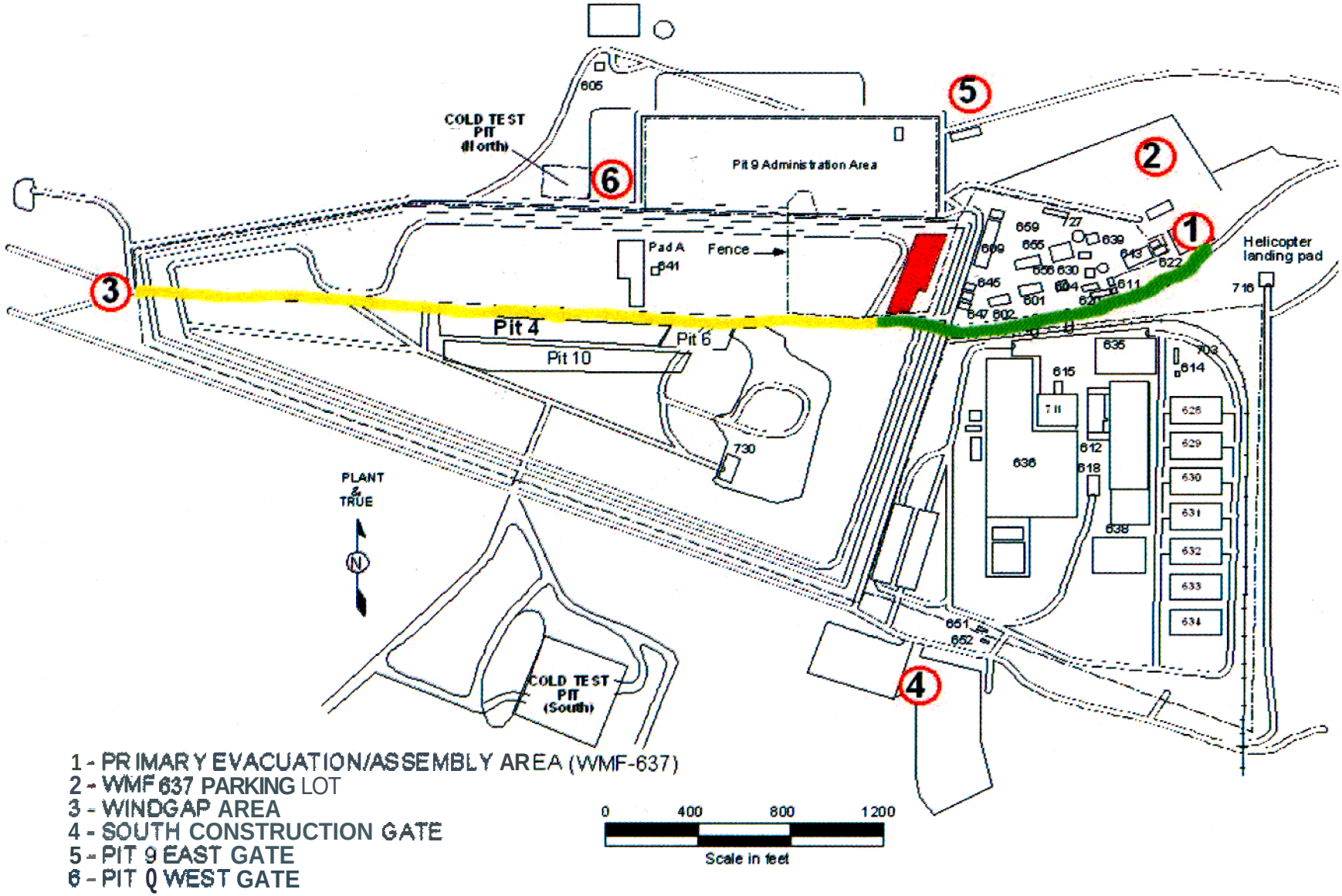


Figure 10-1. Evacuation and assembly areas at the Radioactive Waste Management Complex.

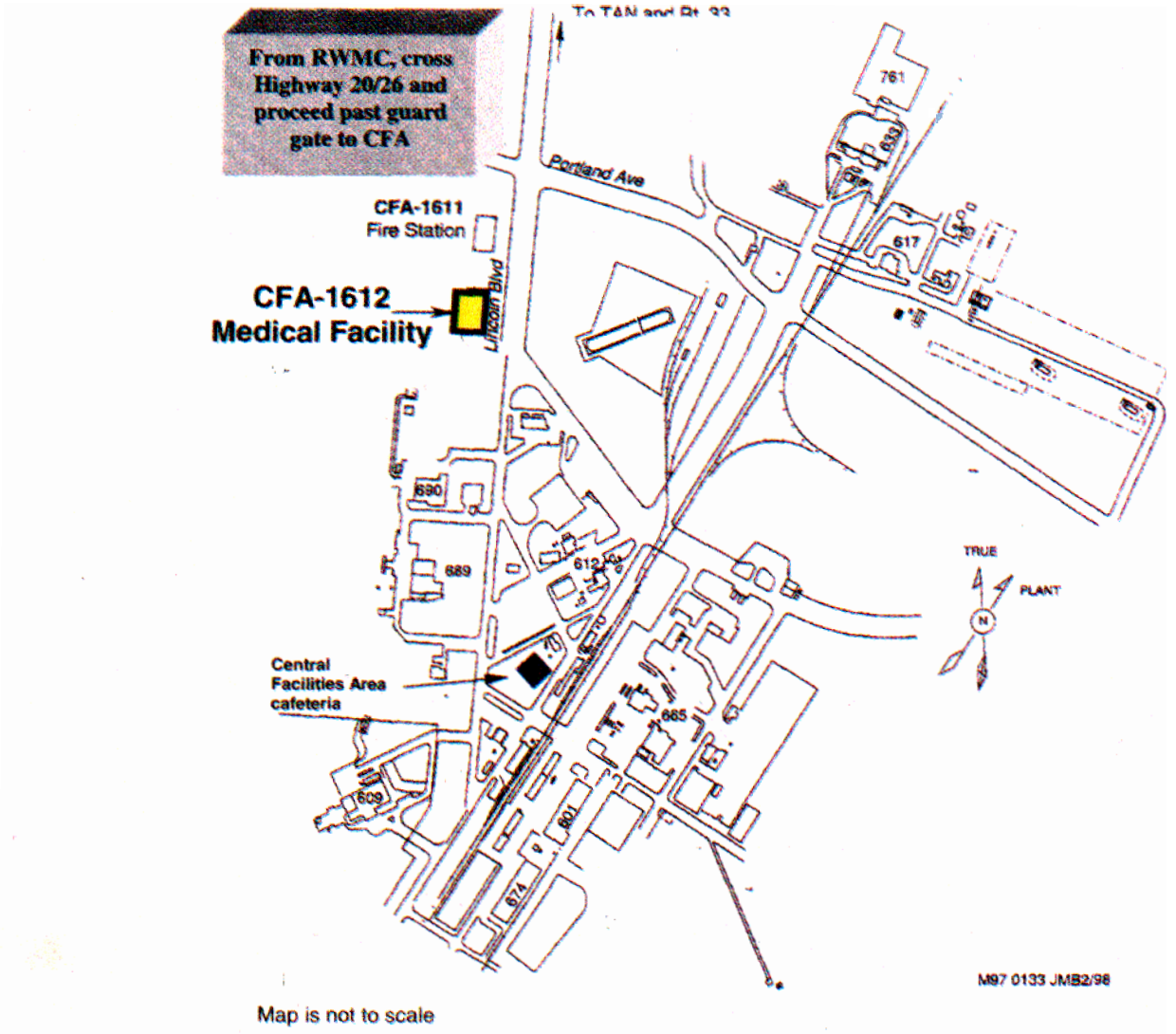


Figure 10-2. Map showing the route to the nearest medical facility (CFA-1612).

10.11 Telephone and Radio Contact Reference List

A list of the points of contact for the OCVZ Project will be maintained current by the OU 7-08 Project Manager and provided to the RWMC Shift Desk. A copy of this list or similar list with key operational contacts will be posted at the OCVZ operations office building at all times. Because personnel listed may change frequently, the official list will be considered the copy provided to the RWMC Shift Desk. This official working copy will be maintained as required to note new positions and changes of personnel assigned. In case of an emergency occurring at RWMC, personnel should immediately contact the RWMC Shift Supervisor at 6-2767 or via an RWMC radio for emergency assistance. If the RWMC Shift Supervisor is not available, then immediately contact the INEEL Alarm Center at 777, or the Warning Communications Center (WCC) at 6-1515.

11. DECONTAMINATION PROCEDURES

Historical OCVZ Project operations have required decontamination. These decontamination procedures are provided as a contingency in the event that waste radiological or chemical contamination is encountered during operational, maintenance, and construction activities. Every effort will be made to prevent contamination of OCVZ equipment through the use of engineering controls, contaminant monitoring, personnel radiological worker training, and by following operating procedures. Where contact with potentially contaminated surfaces may be encountered, additional radiological monitoring as described in Section *3* in combination with use of PPE will be necessary to control the hazard. This section provides guidance on how decontamination will be performed in the event that such contamination is encountered.

11.1 Contamination Control and Prevention

Contamination control and prevention procedures will be implemented to minimize personnel contact with potentially contaminated surfaces that may be encountered during VVET upgrade or maintenance activities and sampling tasks. The use of engineering controls, protective clothing, modified work control practices, or addition of hold points and surveys will all be used to minimize direct contact with potentially contaminated surfaces. The following contamination control and prevention measures will be employed:

- Identify potential sources of contamination and design containment, isolation, and engineering controls to eliminate or mitigate any potential for contact or release of contaminants (where feasible)
- Preplan all operational activities where contact with contamination is anticipated
- Conduct radiological contamination monitoring during OCVZ system opening tasks where contamination may be encountered
- Sleeve or place a disposable barrier between equipment and tools and the contaminated surface or environment (where feasible)
- Wear disposable outer garments and use disposable equipment (where possible)
- Implement immediate isolation or decontamination procedures to prevent the spread of contamination where encountered
- Use only the established radiological entry and exit control points when accessing contaminated areas to minimize the potential for cross-contamination, and expedite contamination control surveys.

11.2 Equipment and Personnel Decontamination

If required, radionuclide decontamination operations for equipment or areas will be performed in accordance with Chapter 4 of the RCM and at the direction of RadCon personnel. Nonradionuclide decontamination will be conducted in accordance with established project procedures or on a case-by-case basis under the direction of Industrial Hygiene personnel to determine the most appropriate PPE. In all cases, the collection, storage, and disposal of decontamination waste will be addressed before the generation of such waste and stored as described in Section 11.5. Protective clothing and respiratory

protection selected for decontamination tasks will be based on the contaminant being decontaminated and as described in Section 5.

11.2.1 Equipment Decontamination

Intrusive tasks in the SDA overburden soils and in the opening of OCVZ system lines present the greatest likelihood for encountering trace radionuclide or organic material contamination. If decontamination is required, equipment and personnel decontamination will use both instrumentation and visual methods to detect contamination and minimize the potential spread and airborne generation of contaminants. The project IH and RadCon personnel will evaluate any contaminated equipment to determine the most appropriate decontamination method, based on the nature of the contaminated item, level of contamination, required effort to decontaminate the item, and requirement for decontaminating versus disposing of such items. Low-cost consumable items will be discarded if initial decontamination efforts fail or extensive decontamination is required that is not in accordance with ALARA principles.

11.2.2 Personnel Decontamination

The OCVZ Project tasks have historically not encountered radiological contamination and will continue to be conducted in Level D PPE. If radiological contamination is encountered, additional PPE will be selected and identified in the RWP to minimize external surface contamination.

Where Anti-C clothing is required, instructions for donning and doffing radiological protective clothing will be posted at the entry and exit control points to radiological control areas in accordance with PRD-183. Before donning PPE, all items will be inspected. One of the greatest potentials for personnel contamination exists from improper doffing of contaminated PPE when exiting a contamination area. All operations personnel who enter radiological contamination areas will doff PPE following the posted instructions. If questions or problems arise while doffing (e.g., tearing protective clothing), guidance and assistance on how to proceed should be requested from the assigned RCT.

11.2.3 Decontamination in Medical Emergencies

Injured or ill personnel should be evaluated immediately by first-aid-trained personnel (within their level of training and on a voluntary basis) within the project operations area where the incident occurred. The VVET technician will contact the RWMC shift supervisor or the WCC (if the RWMC shift supervisor cannot be reached) to summon emergency services.

Medical care for serious injury or illness will not be delayed for decontamination. In such cases, gross decontamination may be conducted by removing the injured person's outer protective clothing (if possible) and other contaminated areas with a bag or glove. If contaminated PPE cannot be removed without causing hrther injury (except for the respirator, which must be removed), potentially contaminated areas of the individual will be wrapped in plastic, blankets, or available material to help prevent contaminating the inside of the ambulance, medical equipment, and medical personnel.

The IH or RCT (depending on the type of contamination) shall accompany the employee to the medical facility to provide information and decontamination assistance to medical personnel. Contaminated PPE then will be removed at the CFA medical facility (CFA-1612) and carefully handled to prevent the spread of contamination. Information on proper handling of radionuclide-contaminated wounds is contained in MCP-148, "Personnel Decontamination."

11.3 Doffing Personal Protective Equipment and Decontamination

Personnel decontamination will likely be limited to doffing of PPE. If contamination is detected on outer PPE layers, careful removal of these outer PPE layers will generally isolate over 99% of surface contamination. This will serve as the primary decontamination method, if protective clothing is contaminated. Removal of contaminated protective clothing using standard radiological doffing techniques (i.e., rolling outer surfaces inward and from top to bottom while being removed) provides the most effective method for containing and isolating contaminants and greatly reduces the potential for exposure to other personnel who would be put at risk of cross-contamination from other decontamination methods (e.g., washing and brushing).

Where protective clothing also is worn as an Anti-C layer, then tape, gloves, booties, and any required dosimetry will be removed following the posted doffing sequence. All PPE will be placed in appropriately labeled waste containers. If exiting a radiological contamination area, personnel will conduct the proper personal survey with hand-held detectors followed by an automated whole-body survey in a PCM (or equivalent), as stated in the RWP.

A general approach for doffing modified Levels D and C PPE is described below. Modifications to this approach are appropriate if operational conditions change, or at the discretion of the RCT in consultation with the IH. Both radiological and nonradiological hazards will be evaluated, as applicable.

11.3.1 Modified Level D Personal Protective Equipment Doffing and Decontamination

Modified Level D protective clothing (e.g., Tyvek coveralls and booties) will be doffed following standard radiological removal techniques (as posted) and will constitute the initial decontamination step. If the protective clothing is also being worn as an Anti-C layer, then tape, gloves, booties, and any required dosimetry will be removed following the posted doffing sequence. All PPE will be placed in the appropriately labeled waste container(s) for disposal. Doffing, and any required decontamination, will take place at the boundary between the contaminated area and the step-off pad. Doffing will be followed by conducting a personal contamination survey, as stated in the RWP.

Note: Under some radiological conditions, two sets of Anti-C clothing may be worn. When required, the posted instructions will address the proper doffing sequence for both sets.

11.3.2 Level C Personal Protective Equipment Doffing and Decontamination

Where respiratory protection is worn in conjunction with protective clothing (Level C PPE), the modified Level D sequence will be followed with one additional step. Following protective-clothing doffing, respirators will be removed and placed in a separate container. A survey of the face and sealing surfaces of the respirator will then be performed by the RCT, or as part of the posted survey instructions by the respirator wearer. Doffing and any required decontamination will take place at the designated radiological control boundary as described above. If exiting a radiological contamination area, personnel will conduct the proper personal survey, as stated in the RWP.

11.4 Personnel Radiological Contamination Monitoring

Radiological surveys (with hand-held detectors and an automated whole-body PCM) will be required before personnel exit project operational areas as stated on the RWP. The purpose of this hand-held instrument survey is to detect surface contamination. If survey instruments or the PCM alarms indicate elevated contamination levels are present, then personnel should remain in the area and contact (or have someone in a nonradiologically controlled area contact) RadCon. When exiting a contamination

area or contamination radiological buffer area, an automated whole-body survey using a PCM station (or equivalent) must be conducted before using designated eating or smoking areas.

11.5 Storage and Disposal of Operational Waste Materials

Waste generated from decontamination and other project operational activities will be properly characterized, stored, and disposed of in accordance with the following documents:

- Manual 17 – Waste Management Plan
- Established project procedures
- Waste-disposal and disposition forms.

12. RECORDKEEPING REQUIREMENTS

12.1 Industrial Hygiene and Radiological Monitoring Records

The IH assigned to the OCVZ Project will record airborne-monitoring and sampling data (both area and personal) collected for project operational exposure assessments in the INEEL Hazards Assessment and Sampling System Database. All monitoring and sampling equipment will be maintained and calibrated in accordance with INEEL procedures and the manufacturer specifications. Industrial hygiene airborne monitoring and sampling exposure assessment data are treated as limited access information and maintained by the IH in accordance with INEEL safety and health manual procedures.

The assigned RCTs will maintain a logbook of radiological monitoring, daily project operational activities, and instrument calibrations where instruments were used to document detection levels or conduct field screening of samples. Radiological monitoring records will be maintained in accordance with Companywide Manual 15B, PRD-183, and MCP-9, "Maintaining the Radiological Control Logbook."

All other health, safety, and radiological records, including inspections, will be maintained in accordance with appropriate and applicable requirements identified in Companywide Manuals 14A, 15A, 15B, and 15C, as well as applicable RWMC and project supplements.

12.2 Records Management

The Environmental Restoration Administrative Record and Document Control office organizes and maintains data and reports generated by field activities. This office maintains a supply of all controlled documents and provides a documented system for the control and release of controlled documents, reports, and records. Copies of project plans, this HASP, *Quality Assurance Project Plan*, and other documents pertaining to these operations are maintained in the project file by the Environmental Restoration Administrative Record and Document Control office. Controlled procedures for the RWMC and OCVZ Project will be issued, controlled, and maintained in accordance with MCP-135, "Creating, Modifying, and Canceling Procedures and Other DMCS-Controlled Documents," and applicable RWMC or project supplemental MCPs.

All additional project records will be maintained in accordance with applicable federal and state procedures, companywide manuals, and project-specific supplemental procedures.

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